WHAT IS CLAIMED IS:

1. An inspection apparatus for a circuit pattern, comprising:

an irradiating apparatus which is constructed by a plurality of lenses and irradiates light, a laser beam, or a charged particle beam onto a surface of a substrate on which a circuit pattern has been formed;

a detector for detecting a signal which is generated from said substrate;

a memory for temporarily storing the signal detected by said detector and visualized as an image;

a comparing apparatus for comparing said stored signal with a signal obtained by visualizing a corresponding comparison pattern in another region as an image; and

a monitor for displaying a defect on said circuit pattern from a result in said comparing apparatus,

wherein a size of each pixel of an image of each of said stored signal and said another signal which is displayed on said monitor is set irrespective of a beam diameter of said charged particle beam.

2. An inspection apparatus for a circuit pattern, comprising:

an irradiating apparatus which is constructed by a plurality of lenses and irradiates light, a laser beam, or a charged particle beam onto a surface of a substrate on which a circuit pattern has been formed;

a detector for detecting a signal which is generated from said substrate by said irradiation;

a memory for storing the signal obtained by said detector and visualized as an image;

a comparing apparatus for comparing said signal stored in said memory with a signal obtained by visualizing a corresponding comparison pattern in another region as an image; and

a monitor for displaying a defect on said circuit pattern from a result in said comparing apparatus,

wherein said memory stores an SEM image which is obtained by irradiating said charged particle beam only once to one region on the surface of said substrate,

said apparatus further has a defect classifying apparatus for extracting a feature of the defect on said circuit pattern included in said SEM image and classifying said defect, and

said monitor displays an image of the defect on said circuit pattern obtained from a result in said comparing apparatus or the SEM image obtained by irradiating again said charged particle beam to said defect on the basis of a result of the classification in said defect classifying apparatus.

3. An inspection method for a circuit pattern, comprising the steps of:

forming an SEM image by irradiating a charged particle beam only once to one region on a surface of a substrate on which a circuit pattern has been formed;

detecting a signal which is generated from said substrate by said irradiation;

storing a signal obtained by said detection and visualized as an image;

comparing said stored signal with a signal obtained by visualizing a corresponding comparison pattern in another region as an image;

extracting a defect on said circuit pattern from a result of said comparison;

extracting a feature of said defect included in said SEM image;

classifying said defect from said feature; and

obtaining again an image of the defect on said circuit pattern obtained from said comparison result or the SEM image of said defect on the basis of said classification and displaying.

4. An inspection apparatus for a circuit pattern, comprising:

an electron source for generating an electron beam;

an electronic optical apparatus which is constructed by a plurality of electronic lenses and irradiates said electron beam onto a surface of a substrate on which a circuit pattern has been formed;

a detector for detecting a signal which is generated from said substrate by said irradiation;

a defect extracting apparatus for visualizing the signal detected by said detector as an image and extracting a defect on said circuit pattern; and

a monitor for displaying the defect extracted by said defect extracting circuit,

wherein said monitor displays an image signal transmitted from another external apparatus in parallel with the display of said defect.

5. An inspection system for a circuit pattern, comprising:

an electron beam appearance inspection apparatus having irradiating means which is constructed by a plurality of lenses and irradiates an electron beam to a plurality of regions on a surface of a substrate on which a circuit pattern has been formed, secondary signal detecting means for detecting signals which are generated secondarily from said plurality of regions by said irradiation, electron beam image forming means for forming electron beam images of said plurality of regions from said detected signals, image storing means for storing said electron beam images, and a display apparatus for displaying said electron beam images; and

an external appearance inspection apparatus having defect image storing means in which a defect image of said circuit pattern has been stored,

wherein said display apparatus of said electron beam appearance inspection apparatus simultaneously displays a map display picture plane and an electron beam image display picture plane of said substrate and the defect image stored in

said defect image storing means of said external appearance inspection apparatus concerned with the electron beam images stored in said image storing means.

6. An inspection process for a circuit pattern, comprising the steps of:

inspecting a substrate on which a circuit pattern has been formed and extracting a defect or foreign matter at the end of a predetermined manufacturing step among a plurality of manufacturing steps of said substrate;

observing said defect or foreign matter existing on said inspected substrate or a part thereof on the basis of a result of said inspection;

discriminating an increase in number of defects or foreign matters in a specific step among said manufacturing steps;

arithmetically operating a correlation between a rate of a yield occurring in a final step among said manufacturing steps and an increase rate of said defects or foreign matters; and

classifying said defect or foreign matter on the basis of a result of said arithmetic operation and a history of each processing apparatus in said manufacturing steps.

7. An inspection system for a circuit pattern, comprising:

at least one inspection apparatus which has an irradiating apparatus which is constructed by a plurality of lenses and irradiates light, a laser beam, or a charged particle beam to a substrate, a detector for detecting a signal which is generated from said substrate by said irradiation, and a defect extracting apparatus for extracting a defect on said substrate on the basis of the signal detected by said detector, and executes an inspection of said substrate and extracts the defect at the end of a predetermined manufacturing step among a plurality of manufacturing steps of forming a circuit pattern onto said substrate;

at least one observing apparatus which has an irradiating apparatus that is

constructed by a plurality of electronic lenses and irradiates a charged particle beam onto said substrate, a detector for detecting a signal which is generated from said substrate by said irradiation, and an image display apparatus for displaying an image of said substrate on the basis of the signal detected by said detector and observes said substrate or a part thereof on the basis of a result of the inspection by said inspection apparatus; and

at least one analyzing apparatus, connected to said inspection apparatus, for analyzing said inspection result by said inspection apparatus,

wherein said analyzing apparatus discriminates an increase in number of defects or foreign matters in a specific step among said manufacturing steps, arithmetically operates a correlation between a rate of a yield occurring in a final step among said manufacturing steps and an increase rate of said defects or foreign matters, and classifies said defect or foreign matter on the basis of a result of said arithmetic operation and a history of each processing apparatus in said manufacturing steps.

8. An inspection system for a circuit pattern, comprising:

an inspection apparatus which has an irradiating apparatus which is constructed by a plurality of lenses and irradiates light, a laser beam, or a charged particle beam to a substrate, a detector for detecting a signal which is generated from said substrate by said irradiation, and a defect extracting apparatus for extracting a defect on said substrate on the basis of the signal detected by said detector, and executes an inspection of said substrate and extracts the defect at the end of a predetermined manufacturing step among a plurality of manufacturing steps of forming a circuit pattern onto said substrate;

observing apparatus including an irradiating apparatus that is constructed by a plurality of electronic lenses and irradiates a charged particle beam onto said substrate, a detector for detecting a signal which is generated from said substrate by

said irradiation, and an image display apparatus for displaying an image of said substrate on the basis of the signal detected by said detector, said observing apparatus observing said defect existing on said substrate or a part thereof on the basis of a result of the inspection by said inspection apparatus; and

transmitting means connected between said inspection apparatus and said observing apparatus, for transmitting said inspection result,

wherein coordinates of said substrate of the inspection which is executed by said inspection apparatus and coordinates of said substrate or a part thereof of the observation which is executed by said observing apparatus are common or have a compatibility.

9. An inspection system for a circuit pattern, comprising:

an inspection apparatus which has an irradiating apparatus which is constructed by a plurality of lenses and irradiates light, a laser beam, or a charged particle beam to a substrate, a detector for detecting a signal which is generated from said substrate by said irradiation, and a defect extracting apparatus for extracting a defect on said substrate on the basis of the signal detected by said detector, and executes an inspection of said substrate and extracts the defect at the end of a predetermined manufacturing step among a plurality of manufacturing steps of forming a circuit pattern onto said substrate; and

observing apparatus including an irradiating apparatus that is constructed by a plurality of electronic lenses and irradiates a charged particle beam onto said substrate, a detector for detecting a signal which is generated from said substrate by said irradiation, and an image display apparatus for displaying an image of said substrate on the basis of the signal detected by said detector, said observing apparatus observing said defect existing on said substrate or a part thereof on the basis of a result of the inspection by said inspection apparatus; and

transmitting means connected between said inspection apparatus and said observing apparatus, for transmitting said inspection result,

wherein a position of the defect detected by said inspection apparatus is detected on the basis of a marking adhered at a location where the position of said defect can be known at the time of the observation which is executed by said observing apparatus.